THE DISTRIBUTIVE IMPACT OF RENT REGULATION

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The purpose of this study is to examine the distributive impact of rent regulation. The study has two components: an analysis of the theoretical aspects of the impact, and an examination of the empirical issues and studies that relate to rent review -- the specific form of rent regulation in Ontario.

Theoretical Models

In the theoretical component of the study, the analysis is divided into two parts: (1) a discussion of the effects of rent regulation under perfect competition and (2) the effects seen under imperfect competition.

The competitive equilibrium section outlines a number of important issues that need to be considered in an analysis of the distributive impact of rent regulation. The effects upon the market value of rent-regulated properties and non-price rationing are the first two issues discussed. Regarding market values, this discussion points out that rent regulation may not only reduce rental payments but also reduce the capital value of rental properties. This cost component resulting from a reduction in the present value of a property's income stream is also discussed in the empirical section. Non-price rationing arises from the excess demand for rental accommodation that results when rent regulation keeps rental prices below the competitive

equilibrium price. This may tend to favour tenants that landlords consider to be "quality" tenants.

Although the study focuses on equity, it includes a section that considers efficiency. This discussion is linked to the discussions of the costs of administration and enforcement in the theoretical component. Since both administration and enforcement require resources, the measurement of these resources can help to estimate efficiency losses. It should be stressed that efficiency losses can often be so large they wipe out any redistributive gains.

An analysis of quality adjustment is presented that draws upon the work of Frankena (1975) and Arnott (1981). It can be demonstrated that when a model that allows for quality adjustments is used to analyse the effects of rent regulation in rental units, the distributive outcomes may be altered. There are indications, however, that in Ontario, in part owing to the form of rent regulation imposed, quality adjustments have not been the typical response of landlords.

And finally, this section addresses the effect on owner-occupied housing and comments on benefits from a wider perspective. With regard to owner-occupied housing, several analyses have suggested that the effect of rent regulation on their price should be considered. However, the effects in this instance are ambiguous and, in all probability, slight. It is suggested that benefits to tenants should be

broadened to take into consideration the shift of part of the property right that results from rent regulation.

Imperfect competition is the topic that concludes the theoretical component. This part explains why the housing market may not be in competitive long-run equilibrium and that landlords may be placed in the position of oligopolists. This suggests that rents are above the long-run competitive equilibrium level and that the imposition of rent regulation will have the following results:

1. landlords of rent-regulated buildings suffer a loss when rent regulation is introduced but still earn a normal rate of return, and
2. tenants of rent-regulated buildings benefit from a reduction in rents.

Empirical Issues

This component of the study focuses on three main issues. First, there is an examination of the results of the major Ontario research that analyses the distributive effects of rent review. Second, there is a discussion of the limitations of the methodological approaches used in these studies. Finally, the limitations of the data used are addressed.

There have been three studies that estimate the redistributive effects of rent review and that make the assumption that the policy has reduced the rents of controlled units. These three studies, (Fallis, 1980;

Miron, 1981; and Blatt, 1982), all use the same data source -- Household, Income, Facilities, and Equipment (HIFE) -- and all suggest that the effect of rent review is mildly progressive. Each study examines the benefits (reduced rents) and the costs (loss of rental income) for Ontario households separated by income class. This section also describes the studies that have attempted to examine the decrease in the capital value of rental properties resulting from a decrease in rents. These studies show that there appears to be a relative reduction in the value of rental units but they are limited to Metropolitan Toronto.

The limitations of the methodological approaches addressed relate to the lack of horizontal equity on either the cost or benefit side, the extent that some temporal considerations are not taken into account in the studies described, and the influence that the definition of income used in the analyses may have on the outcomes. In addition, the bias introduced by not considering costs or benefits that flow out of Ontario (the closed-economy assumption) is discussed. There is also a discussion of how the studies determine the rent standard (that is, what rents would be in the absence of regulation) and the degree to which rents have been reduced by rent review. This last point is essential for estimating the costs and benefits of the rent review policy.

There are a number of limitations to the data that affect the results of the studies. The most important

relate to the techniques used for collecting the HIFE data. In addition, specific questions are raised regarding (1) the aggregation of all households with incomes exceeding $25,000, especially with Ontario's current distribution of household incomes; and (2) the use of investment income as a proxy for rental income for assessing the distribution of costs.

Conclusion

The theoretical models, despite some weaknesses, suggest that landlords of rent-controlled units bear the burden of rent regulation (lower rental incomes), while the tenants enjoy the benefits (lower rents). The results of the model under imperfect competition suggest, however, that landlords in the controlled sector may not be as badly off as those operating under the traditional perfectly competitive model. The magnitude of the impact on the controlled sector, therefore, depends on which model is most suitable. There may also be variable effects on the uncontrolled sector with each model.

All of the empirical studies attempt to estimate impact rather than incidence. Each study found the impact to be mildly progressive which means that net benefits (benefits minus costs) are enjoyed more by low-income people than by high-income people. It is important to note that these Ontario studies have a number of data limitations that suggest that more or better information is needed in order

to measure more accurately the impact on specific groups in the controlled and uncontrolled sectors.

In order to understand better the distributive effects of rent regulation we need to know more about

- the existence and nature of imperfections in the market
- the supply response to changes in demand
- the extent and nature of non-price rationing
- the income profiles of tenants and landlords
- the rent standard, that is, what rents would be in the absence of regulation
- the impact on rental starts

Finally, it is pointed out that two policy issues remain:

1. It must be considered whether rent regulation is an efficient and suitable method of redistributing income, and
2. The redistributive effect of rent regulation has to be considered in the context of other housing programs and income security programs that (implicitly or explicitly) redistribute income.

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INTRODUCTION

An analysis of the distributive impact of rent regulation[1] attempts to determine which income class (or age group or size of family) bears the burden of rent regulation and which enjoys the benefits. This type of analysis involves two major steps. The first step is to derive a theoretical model of the rental housing market to determine the effect of rent regulation on various people such as landlords and tenants. This analysis identifies those who bear the burden and those who enjoy the benefits. The second step is to estimate the burdens and benefits by income class.

The existing studies of the distributional impact assume a perfectly competitive market for rental housing[2] in which rent regulation places a ceiling on the price of rental housing below the long-run competitive equilibrium price (see, for example, Frankena, 1975 and Arnott, 1981). It is usually concluded that renters benefit from rent regulation because rents are held below the market rate and that landlords bear the cost because their rental incomes are reduced. The benefits to renters are generally distributed by income class in the same way as rental payments, and the burden to landlords is generally distributed according to rental income (or some proxy for rental income such as investment income). Because renters have relatively low incomes and landlords have relatively high incomes, rent regulation is considered to be a progressive policy: people

with low incomes receive relatively more of the benefits and people with high incomes bear relatively more of the costs.

The purpose of this study is to evaluate the current studies of the distributive impact of rent regulation and to consider a number of modifications. This study questions both the underlying theoretical models of the rental housing market that are implicit in the analysis of the distributive impact and looks at the empirical findings. It attempts to determine the biases in the results of existing work that have been presented in general and for the Ontario rent review system.

Current empirical studies of the distributive impact only consider the initial effects of rent regulation; that is, they conclude that rents are lower (see, for example, Miron, 1981 and Blatt, 1982). They do not consider, however, the final incidence of the policy -- who bears the burden or who enjoys the benefits after the various agents in the market have adapted to the policy. In other words, one agent can shift the burden of the regulation to someone else: for example, if landlords are faced with lower rents, they can shift part of the burden onto tenants by reducing maintenance. Only after all of the behavioural adjustments have been made, can the gainers and losers be identified.

On the theoretical side, the traditional economic analysis of rent regulation, as noted above, assumes that without rent regulation the housing market is perfectly competitive but that under regulation rents are kept below the competitive equilibrium. These studies do not consider

a number of market imperfections that may already exist and that may require the application of a different theoretical model. For example, the rent being charged before regulation may be above the competitive equilibrium for various reasons. It is possible, then, that rent regulation acts to reduce rents to the efficient level (or perhaps somewhat closer to it). The distributional implications of this type of model are likely to be different from those the traditional model suggests.

There are also important empirical issues to be considered. First, there are several methodological problems with studies of the distributional impact of rent regulation. The empirical studies, for example, only look at the effect of rent regulation among income classes (vertical equity) but do not say anything about the effect within classes (horizontal equity). When the variation within classes exceeds the variation among classes, the distributional studies hide more information than they provide. Another problem arises in trying to determine what market rents would have been without rent regulation.

A second set of empirical problems has arisen in Ontario because of the lack of suitable data for distributing the burdens and benefits by income class. For example, investment income is often used as a proxy for rental income, but to the extent that they are different, the results will be inaccurate. Moreover, the data used are six years old and thus the results may no longer be accurate.

This study is divided into two main sections and a conclusion. The first section considers the theoretical issues. It summarizes and evaluates the existing model of the effect of rent regulation and considers an alternative model that relaxes the assumption that rents were at perfectly competitive equilibrium before the imposition of rent regulation.

The second section takes a close look at existing empirical studies and attempts to analyse the various problems with the methodology and data used, and the implications of those shortcomings.

The conclusion summarizes the findings on the theoretical and empirical analyses and suggests what they imply for the distributive impact of rent regulation in Ontario. It considers the direction of the biases in the results and suggests what additional information is needed to attain an accurate estimate of the burdens and benefits of rent regulation.

THEORETICAL MODELS

Effects under Perfect Competition

It is generally assumed in studies of the impact of rent regulation that the housing market is perfectly competitive. In a state of perfectly competitive long-run equilibrium, the number of units that landlords want to rent equals the demand for these units. The rent at which that occurs is the market clearing rent. This model assumes that rent regulation lowers the price of rental units below this equilibrium, resulting in excess demand for the rent-regulated units. The analysis of what transpires in the marketplace usually ends at this point -- landlords suffer a burden because their rental incomes are reduced and tenants enjoy benefits because their rents have been lowered.

This section outlines a number of important issues that should be considered in the analysis of the distributive impact of rent regulation.

Market Value of the Property

The first problem with the standard analysis is that it often ignores the capital loss to landlords. The reduction in rental income immediately lowers the market value of the property since the market value depends on the present discounted value of expected rents. A property that sold for a particular amount before rent regulation will not sell

for the same amount if the rents that can be charged are regulated and are expected to be below the market rent for some time in the future. Thus, the owner of the property at the time controls are imposed suffers a capital loss because he can no longer get a price for his property that reflects market rents.[4] Prospective owners are unaffected because they pay less for a rent-regulated building to compensate for the lower rental income that they will receive. They pay a price that reflects the appropriate risk-adjusted required rate of return. In this way, rent regulation is capitalized into the value of the property.[5]

It is also true that landlords of rent-regulated units suffer a capital loss resulting from an increase in uncertainty. The risk aspect of the capital loss may be particularly important because changes in the rent regulation system (including removal) are unlikely to reduce the risk factor. The long-run effect of the risk factor as it applies to capital values and equilibrium rent levels lasts longer than any restraint on rent increases. The risk factor also tends to drive rents higher in the unregulated sector to compensate for the risk.

The current rent review system in Ontario somewhat reduces the capital loss to landlords who sell their buildings by allowing cost pass-through (although this was probably not the original intention of cost pass-through). A prospective landlord is often able to increase rents beyond the regulated amounts because, for example, he can

pass through the higher mortgage payments that may have resulted from the sale. If he can raise rents by more than the statutory increase, then he may be in a position to offer more for the property than under a strict statutory increase program. The value to the selling landlord is not directly affected, but the value to the buyer may be substantially higher. This difference may be captured, through bargaining, by either the buyer or the seller.

It seems somewhat inconsistent, however, to depress the income flow while at the same time ensuring that the capital value is maintained. If the intent is to maintain the capital value, then the purchasing landlord must be allowed to charge market rents.

Non-Price Rationing

A second issue is the distributional implications of non-price rationing. It is generally concluded in the traditional empirical analyses that there will be excess demand for rent-regulated housing. With excess demand, however, landlords can no longer use "price" as a method for rationing available units. Landlords are expected to choose the least expensive tenants -- those who seem likely to stay for a long time and to take good care of the unit. As a gauge of a tenant's reliability, landlords are likely to use income on the assumption (accurate or not) that higher-income people make better tenants (see Arnott, 1981). There may also be a tendency to favour single-person households

over families with children.

Another form of rationing is waiting lists. Landlords may suggest that prospective tenants put their names on a waiting list until a unit becomes available. It can be argued that waiting lists favour long-time residents of an area, that is, people who know the neighbourhood and the unit.

Finally, side payments can be made to landlords of rent-regulated units. Such payments include key money, payments for furnishings, and so forth. This method of rationing is not allowed under most rent regulation systems but is sometimes practised. In the case of side payments, the market situation returns because market rents are again being charged for these units. Landlords would take side payments up to the point where the demand for their units just equals the supply. This method of rationing negates the benefits of rent regulation and means that the benefits to renters are lower than they would have been in the absence of side payments.

Non-price rationing thus tends to reduce the benefits of rent regulation to renters. Waiting lists and the landlord's discretion to decide who will obtain the available units tend to favour residents who have lived in a neighbourhood for a long time and those with high incomes. Side payments serve to return some rental units to the market situation, thus presumably taking away benefits from low-income tenants. The overall impact of rent regulation,

therefore, may not favour low-income people to the extent that traditional empirical studies suggest.

Efficiency Loss

Although this study concentrates on the equity or distributive effects of rent regulation, it is important to consider briefly the efficiency implications as well. Even though rent regulation may cause a progressive redistribution of income from landlords to tenants, the sum of the net costs and benefits across the whole population may nevertheless be negative. In other words, it is possible that this policy hurts everyone.

The economy is said to be efficient if no reallocation of resources will make anyone better off without making someone else worse off. There would be an efficient allocation of resources in a perfectly competitive market in which there was no government intervention, households and firms had full information, their actions could not affect the price in the market, and there were no transaction costs.

Rent regulation creates inefficiencies in the market because it distorts people's behaviour. For example, landlords may reduce maintenance expenditures below the efficient amount, tenants may be less mobile, and people's decisions on where to live may be adversely affected. Thus, rent regulation produces a number of distortions that reduce the value of output to society.

The concept of efficiency loss, or cost of rent regulation, is difficult to measure because no one has calculated it in dollar terms. The concept is important, however, because it emphasizes the costs of particular policies or what one has to give up in order to achieve certain goals. Some efficiency losses such as the cost of administering and enforcing rent regulation can be measured. These are discussed below.

As to who gains and who loses from rent regulation, it should be stressed that the efficiency loss can be so large as to wipe out the value of any redistributive gains. For example, under a scheme where rents are kept below the long-run perfectly competitive level, landlords may reduce their expenditures on maintenance, and the benefit the tenants receive from the reduction in rents may not compensate for the lower standard of maintenance. Tenants may thus gain compared to landlords in relative terms but, in absolute terms, they may be losers. Without the proper means to measure the efficiency loss, however, it is difficult to know the final outcome.

Cost of Administrative Procedures

A third issue is the distribution of the administrative costs of rent regulation. Depending on the type of scheme used, the administrative costs often increase the landlords' expenses (and, to a lesser extent, the tenants'). Taxpayers

in general also share the burden of administrative costs. The costs of compliance are expected to be relatively greater for small landlords than for large corporate landlords, because the latter tend to keep more detailed records and because they can spread the costs of review over more properties (see Blatt, 1982). Omitting administrative costs from the standard empirical analysis understates the costs to landlords, particularly, the relatively heavier burden on small landlords.

Administrative costs are also borne by taxpayers, but it would be very difficult to calculate the distributional impact.[6] All administrative costs represent an efficiency loss because resources are being spent with no discernible output.

Quality Adjustment

Partial equilibrium models have generally not considered adjustments in quality since they have looked at the quantity of housing only. This means that rent regulation in the traditional models leads to excess demand and there can be no adjustments for quality.

Two more recent models have expanded the economic analysis of rent regulation to include the possibility of quality adjustments.[7] Frankena (1975) assumes housing has two attributes -- size and quality -- and he distinguishes between two types of rent control: a ceiling on the rent per unit of housing service and a ceiling on the rent per

dwelling unit (that is, a ceiling on revenue rather than price). Using a supply and demand model, he concludes that if the price per rental unit is controlled, then there will be excess demand and non-price rationing. If the total rent is controlled, however, landlords will have an incentive to allow rental units to deteriorate until the rent-controlled rent for each rental unit (of lower quality) just equals the rent that the unregulated market would dictate. In other words, the price per unit of rental housing services will rise until it just equals the market-clearing rent. The result is no excess demand or non-price rationing because the short-run equilibrium will be re-established with a reduced quality of the rental housing stock. The distributive implications of these models are discussed below. Frankena argues that the impact of rent control will depend on the nature of the scheme imposed; for example, whether there are exemptions, whether the controls are permanent or temporary, and whether it is possible to evade the controls.

Arnott (1981) analyses more specific rent regulation schemes, using a different model that also assumes that housing has two attributes -- size and quality. In this model, housing is usually constructed at high-quality levels and gradually declines in quality until it is demolished. The speed at which the quality deteriorates depends on maintenance expenditures and on the market value for housing of a given quality where the market value of a housing unit

equals the discounted present value of the anticipated rents less anticipated maintenance expenditures and other expenditures (all adjusted for risk). The impact of rent regulation depends on such things as the maintenance technology and market conditions.[8]

Under guideline increase controls,[9] the landlord, according to Arnott, will do one of two things. First, he can reduce maintenance so that the quality of the unit falls to the point where the regulated rent just equals the market-clearing rent and there is no excess demand. Or he can cut back on maintenance expenditures to a somewhat lesser extent. In that case, housing quality falls less rapidly and some rent-controlled housing will be in excess demand. The results of this model are similar to the results of Frankena's model.

There will be two different distributional effects under the models described above: (1) excess demand and (2) quality adjustment with no excess demand. If there is only a quality adjustment, then the rent-regulated rent will be equal to the market-clearing rent. Tenants will be neither better off nor worse off.[10] Landlords will suffer a capital loss equal to the discounted present value of the loss resulting from having to adjust to rent controls.

It is also possible that the controls will alter the market-clearing rent. Controls will cause the quality of rental housing to decline more rapidly than in the absence of controls. In the short run, the stock of low-quality housing will increase more rapidly than other types of

housing. Market-clearing rents on low-quality housing will fall, making the poor better off; market-clearing rents on medium- and high-quality housing will rise, making middle-income groups worse off. If rents increase in high-quality housing, more would likely be constructed. In theory, in the long run, when all this new housing has been constructed and is unregulated, the pre-control equilibrium will be re-established. Of course, this assumes that the market will be stable in the long run.

When there is excess demand in response to rent regulation, the rental housing market is subdivided into the controlled market and the uncontrolled market.[11] Renters unable to find controlled units will seek rental accommodation in the uncontrolled sector. In the controlled market, non-price rationing will occur, with the benefits accruing in some cases to high-income tenants, as noted earlier. Thus, higher-income tenants in the controlled sector are likely to be better off; higher-income tenants in the uncontrolled sector are likely to remain the same because the quality-adjusted rent on uncontrolled housing constructed after controls were introduced will probably be the same as it would be if there were no controls. For middle-income groups, the effects are ambiguous. Scarcity of medium-quality accommodation may mean that this group will settle for lower-quality controlled units or higher-quality uncontrolled units. Some may even obtain higher-quality controlled units. Last, the deterioration of

housing quality will mean that initially, there will be more low-quality housing available. This will benefit low-income tenants, but the ensuing non-price rationing will likely work against them.

A recent study by Fallis and Smith (1984) suggests that excess demand results in a rationing process that allocates the controlled stock to those who occupy it at the time the controls are imposed. Shifts in the demand for uncontrolled housing (because of factors such as rising incomes and changing demographics) will increase the rent beyond what would have been the equilibrium rent in the absence of controls. The distributional effects are that renters in the uncontrolled sector are worse off.[12] This result is different than Arnott's above. He suggests that renters in the uncontrolled sector probably remain the same. The analyses differ in their treatment of construction lags.

There is also evidence in Ontario, based on surveys of landlords, tenants, and site visitors in Toronto that the maintenance of rental units was generally good and that it had not deteriorated over the previous year (see Municipal Affairs and Housing, 1982).[13] In other words, there appears to be little or no adjustment in quality. A one-year period, however, is hardly sufficient to determine quality adjustment.[14]

Further, under the Ontario rent review system, with cost pass-through provisions, the decision to invest in maintenance depends in part on what expenditures can be passed through to the tenants. In other words, what

determines the maintenance decision is not only market conditions (as the quality adjustment models suggest), but also what the rent review system allows.[15] Maintenance will be undertaken up to the point where the last dollar spent increases the building value by one dollar. Those expenditures that can be passed through, thereby resulting in rent increases, raise the value of the building.

This analysis of the maintenance expenditure decision, coupled with the Ontario findings that rent regulation has not led to a deterioration of quality, and Fallis and Smith's findings that excess demand in the controlled sector leads to higher rents in the uncontrolled sector, all seem to suggest that landlords in Ontario have not responded to rent regulation by reducing their expenditures on maintenance in order to equate the market-clearing rent to the regulated rent. The theoretical models suggest that if the level of maintenance in Ontario housing has not been strongly affected by rent regulation, either there should be excess demand or rent review is having little effect, perhaps because of the cost pass-through provisions or lack of enforcement.

Owner-Occupied Housing

In addition to considering the effect on rent regulation on the regulated and unregulated rental housing markets, some studies briefly consider the effect on the market for owner-

occupied housing. However, the results are ambiguous and the effect is thought to be slight (see, for example, Arnott, 1981 and Fallis, 1984).[16] On the one hand, tenants in rent-regulated housing may enjoy relatively low rents and thus their demand for owner-occupied housing is reduced. On the other hand, they may use their additional savings to buy their own homes. Tenants in the unregulated market may similarly increase or reduce their demand for owner-occupied housing. To the extent that the demand for owner-occupied housing is increased, the market value of these houses will increase in the short run, providing capital gains to existing home-owners. New home-buyers will face higher housing prices. Alternatively, if demand falls, potential home-buyers benefit and existing home-owners lose. In the long run, the effect depends on whether the cost of new housing remains constant, increases or decreases. It may well be that the long-run effect is trivial compared to other factors affecting housing prices.

To analyse the effect of rent regulation on the price of owner-occupied housing, it is necessary to consider what other influences there may be on the price. For example, changing demography will affect the demand for owner-occupied housing, as will high interest rates and increased incomes. A significant influence on the purchase of owner-occupied housing has come in the past from various government subsidies, both federal and provincial, such as CMHC mortgages and renter-buy programs.[17] These factors would have to be held constant in a model that estimated the

effect of rent regulation on the price of owner-occupied housing.

Enforcement

Briefly, it should be noted that the degree of enforcement affects the extent to which rent regulation holds rents below the market-clearing level. It also has important distributive implications. In particular, educated, high-income tenants and tenants in buildings with a representative tenants' group are likely to know the regulations and be able to enforce them themselves even if the regulators do not. Other tenants are likely to suffer from illegal rent increases, particularly where turnover rates are high or where tenants are unaware of the regulations. A more detailed discussion of enforcement issues can be found in Slack and Glied (1983).

Benefits

As noted previously, the main benefit of rent regulation is generally assumed to be the reduction in rents for tenants in the regulated sector. Other benefits, however, can also be considered. Rent regulation shifts part of the property right to the tenants in the sense that they are given greater security of tenure and greater certainty concerning rent increases. This implies that tenants in regulated

units are more likely to provide more responsible maintenance, and may be less inclined to damage the premises, delay rent payments, or move out.

Summary

To summarize the perfect competition model and to apply it to the rent regulation system in Ontario, the following scenario seems likely:

1. Landlords of rent-regulated units face a loss in rental income and a resulting capital loss (although this is not a full capital loss because of the cost pass-through provisions). They may also have to incur expenditures to go through the rent review process.
2. Tenants in regulated units (where the guideline increase applies) benefit, and they are likely to be those who were in those units when the regulation came into effect. Depending on the types of rationing used and who was there first, they might be high- or low-income tenants.
3. Landlords of unregulated units receive higher rents because of the spill-over of excess demand from the regulated sector. They benefit initially from the higher rents until the supply of rental housing increases.
4. Tenants of unregulated units are likely to be worse off because their rents are higher, at least until the supply increases. These high rents will probably be charged to new entrants to the rental housing market, and it is not clear

whether these are high- or low-income tenants. Tenants of unregulated units may also be worse off in the long run because of the risk associated with future rent regulation.

These conclusions are tentative, and further data are needed to determine the distributional implications of rent regulation. In particular, it would be useful to have more information on the incomes of tenants and landlords in the regulated and unregulated sectors to determine whether rent regulation is progressive or regressive in incidence (see "Empirical Issues" below for a discussion of available data).

Effects under Imperfect Competition

All of the foregoing analyses and, indeed, all of the traditional economic analyses of the effects of rent regulation begin with the assumption that the housing market is perfectly competitive and that (before rent regulation) rents being charged were the long-run competitive equilibrium rents. It logically follows, then, that rent regulation lowers rents below this equilibrium and thus creates inefficiencies in the housing market. Rent regulation also has distributive implications: some landlords suffer losses and some tenants enjoy benefits.

The assumption that the rents being charged are long-run competitive equilibrium rents is crucial to the above

analysis. There are, however, three other possibilities. First, it is possible that rent regulation merely keeps the regulated price at the perfectly competitive equilibrium. In other words, the regulatory constraint is not binding and the regulation does nothing. There is no analysis to be undertaken in this case except perhaps to consider the administrative costs. Second, the rent can be regulated at a price higher than that determined by the perfectly competitive equilibrium (as is the normal situation when prices are regulated). Since this is not likely to be the case with rent regulation whose purpose is to keep prices down (not up), there is no reason to analyse this situation either. Finally, it is possible that the market rent is above the long-run perfectly competitive level and that rent regulation brings the rent closer to or even beyond the efficient point. This third case merits further consideration.

The market rent may be above the long-run perfectly competitive level for several reasons. First, the rental housing market may not be perfectly competitive. If it contains elements of oligopoly, landlords can set, rather than take, prices for rental housing. This would mean that rents are higher and that the supply of rental units is lower than under perfect competition. One can also question the assumptions of full information and no transaction costs that characterize the perfect-competition model. For example, some tenants, particularly the low-income and elderly, have little information about alternative housing

and have to pay high moving costs. Second, the supply of rental housing may not be very responsive to demand because it takes so long to plan and build new residential units. This is partly a result of the planning process, which requires approvals at various stages. Third, when the cost of new construction is rising, there will be corresponding higher rents on older buildings even though there are no cost increases. This makes the market rent on existing buildings higher than the long-run perfectly competitive rent.

For the purpose of analysis, this last example is considered where the rents being charged before the imposition of rent regulation were above the long-run perfectly competitive equilibrium because of government intervention in the market for new housing. Although only one example is analysed, it is intended to show how a movement away from the assumption of perfect competition can alter the results. A more general analysis of rent regulation in an imperfectly competitive market would be necessary to determine its distributive effect.

Prices in the market for new rental housing may be higher than they might otherwise be in a freely operating market because of land-use regulations and various building codes and standards used at different times to provide services that have not been valued in the marketplace. Although this form of government intervention probably remedies an initial market failure -- of asymmetric

information between sellers and prospective buyers -- it also increases the cost of new rental housing. Since the marginal cost of supplying new rental housing has increased, the equilibrium rent in the marketplace has been driven up to a higher competitive equilibrium level. Landlords of existing rental buildings thus enjoy a windfall gain because the true cost of housing services (in their buildings) is less than the market rent.[18]

This starting point for an analysis of the effects of rent regulation is somewhat different from the starting point used in the traditional analysis. Specifically, landlords in older buildings are enjoying a windfall gain and the tenants are suffering from high rents. This situation has resulted because of different costs in old and new buildings not valued in the marketplace. The competitive equilibria in the two markets do not reflect the difference in cost characteristics.

Owners of new buildings are making a normal rate of return (that is, one that reflects the cost of construction), and tenants of new buildings are paying rents that reflect the marginal cost of the new buildings. These rents would probably be lower in the absence of land-use and other regulations.[19] It is the renters of older buildings who suffer because the rent they pay does not reflect increased costs to their buildings resulting from land-use and other regulations.

Impact of Rent Regulation

A rent regulation system that exempted new properties and allowed a normal rate of return on regulated units would alleviate the problem. In such a system, landlords of existing buildings would still face a reduction in income that would not affect their economic behaviour and tenants of existing buildings would still gain from the reduction in rents. Landlords and tenants of new buildings, however, would face no change in rental incomes and rents.[20]

Under a system that exempted new units, landlords of older buildings would be earning a normal rate of return and could do no better by reducing their expenditures on maintenance or moving into another sector. There would also be no excess demand because the new rent would be an equilibrium rent. The phenomena that occur in the traditional model, such as non-price rationing, therefore, would not occur here.

Summary

To summarize, the effects of rent regulation in a model that assumes that rents are above the long-run competitive equilibrium level and where rent regulation applies only to the existing housing stock (as in Ontario) would be the following:

1. Landlords of rent-regulated buildings would suffer a loss when rent regulation was introduced but would still earn a normal rate of return.
2. Tenants of rent-regulated buildings would benefit from a reduction in rents.
3. Landlords in unregulated buildings would neither gain nor lose.
4. Tenants in unregulated buildings would neither gain nor lose.

The main difference between the results of this model and of the perfectly competitive partial equilibrium model is that with the latter model there is excess demand in the regulated rental housing market and consequently higher rents in the unregulated market. The above discussion, provides only one example of how that may occur and what the results would be. This example shows that the existing models make specific assumptions resulting in particular outcomes. Other possible market imperfections and their potential effects on landlords and tenants should also be considered. The traditional model may no longer be appropriate.

Before the results of relaxing the perfectly competitive equilibrium model can be applied to Ontario, it is necessary to test a number of assumptions. For example, one needs some evidence that government land-use and other regulations do increase the real cost of housing. A complete analysis should also consider many other variables, including the

effect of government subsidies for rental construction, which presumably lower the real cost of construction.[21]

Empirical Issues

The empirical studies of the distributional impact of rent review are based on the simple partial equilibrium theory, described above, where tenants benefit from reduced rents and landlords bear the costs of reduced rental income and a reduction in the capital value of their rental buildings.[22] The empirical work has concentrated on the redistributive impact of rent regulation. Although this is an important start, it may not go far enough to describe adequately the effects of rent regulation. It is also necessary to estimate the final incidence of the policy after various adjustments have taken place.

Studies of incidence assume that landlords and tenants try to shift the costs of rent regulation onto others or to capture the benefits for themselves. Impact studies usually do not take shifting into account. For example, in the studies described below, it is assumed that there is no shifting in response to rent review. This assumption is based on the notion that in the short run the quantity of housing does not change.

This section of the study is divided into three parts. The first part describes the empirical studies of the redistributive impact of rent review for Ontario. The

second part discusses a number of methodological issues arising from the Ontario studies, in particular, an analysis of impact and incidence of rent review. The section concludes with a discussion of data issues and limitations as they pertain to the Ontario studies.

Ontario Studies of the Redistributive Impact of Rent Review

There have been two kinds of empirical studies of the redistributive effects of rent review in Ontario. One kind of analysis is the distribution of costs (rental income loss) and benefits (reduced rents) among households by income class (see Fallis, 1980; Miron, 1981; and Blatt, 1982).[23] The second type examines the decrease in the capital values of rental units (see Smith and Tomlinson, 1981 and Blatt, 1982).[24] The emphasis here is on the cost to the owners of rental accommodations at the time rent regulation was introduced.

The following two sections outline the studies mentioned above and discuss the inherent methodological problems and the limitations of the data.

Redistributive Effects of Reduced Rents

The typical approach used to estimate the effect of rent review distributes both costs and benefits by income class. This approach requires information on the income distribution of the various types of households being

considered (for example, controlled and uncontrolled rental and owner-occupied), information regarding the rental savings for each income class of controlled renters and information on the loss in rental income for each income class of households. Income costs and benefits are then assessed for each income class and are compared to determine the net benefit (benefits minus costs) in each class. If net benefits in relation to income rise as incomes rise, the policy is considered to be regressive; if they fall as incomes rise, the policy is progressive.

The first analysis undertaken for Ontario provides a rough approximation of the effects of rent review (see Fallis, 1980). His analysis, which is based on 1972 Household, Income, Facilities and Equipment (HIFE) data, assumes that rent review reduces the price per unit of housing service by 2 per cent.[25] He examines both the ratio of rent reduction to income (benefits) and the ratio of investment loss to income (costs) by income class. Each of the measures is examined separately by income class and then the combined measure of the ratio of net benefits to income is estimated. To estimate the average rental income loss, he uses investment income, which he assumes is distributed in proportion to income from rents.

His analysis shows that the benefits of rent regulation are progressive among renters, that the pattern of income losses among investors is first regressive and then proportional, and that the combination of the two effects is

proportional through the middle-income range, while being progressive at both the upper and lower-income ranges. This means that rent regulation tends to benefit low-income people and to burden high-income people (see Table 1).

An analysis that follows Fallis' method but is more detailed and comprehensive is a study by Miron (1981). Here he estimates the benefits and the costs of rent regulation by examining a broader range of cohorts (groups of households). His study, which is based on HIFE data for 1978 as well as data from the Ministry of Municipal Affairs and Housing Rental Market Survey data, examines costs and benefits not only by income class, but also by demographic characteristics, including age of the head of the household and life-cycle status.

In the Miron analysis, the estimates are derived on the basis that the reduction in rents for 1978 is 1 per cent.[26] The effects are assumed to be proportional, which means, that a 5 per cent reduction in rents, for example, would have five times the effect of a 1 per cent reduction. There would be no change in the variation between income classes. If there is evidence that the impact is larger or smaller than the 1 per cent, estimates can be made by generally multiplying the impact results by the appropriate percentage change. Once the 1 per cent impact is calculated for each rental household in the province, the total rent saving can be calculated by totalling the number of renters in each cohort. On the cost side, net income from investment is used to distribute the reduction in rental income among

TABLE 1: Approximate Redistribution of a Rent Control Program Using Ontario Data for 1971

Income	Renters		Investors			All Households
	Average Rent Reduction (1)	Ratio of Rent Reduction to Income (2)	Percentage of House-holds with Investment Income (3)	Average Investment Income Loss (4)	Ratio of Investment Loss to Income (5)	Ratio of Net Benefits (Loss) to Income (6)
$ 0-$ 2,000	$26	0.022	26	$ -8	-0.006	0.007
2,000- 3,999	27	0.009	39	-20	-0.006	0.001
4,000- 5,999	28	0.006	41	-22	-0.004	0.001
6,000- 7,999	31	0.004	41	-19	-0.003	0.0
8,000- 9,999	33	0.004	45	-17	-0.002	0.001
10,000- 11,999	33	0.003	46	-13	-0.001	0.0
12,000- 14,999	37	0.003	58	-15	-0.001	0.0
15,000- 24,999	39	0.002	66	-25	-0.001	-0.001
25,000+	48	0.002	78	-97	-0.003	-0.002

SOURCE: George Fallis, 1980, Housing Programs and Income Distribution in Ontario, Toronto, Ontario Economic Council.

households, assuming, as does Fallis, that rental income is proportional to net income from investment.

Miron attempts to exclude subsidized households from the analysis, that is, households (in uncontrolled units only) that are shown by the HIFE data to make rent payments that are "subsidized or unusual."[27] He also reasons that a one-dollar benefit to renters from rent reduction is worth less than a one-dollar cash grant, since the renter would have the choice of spending the grant on housing or other goods and services. Therefore, he uses two different utility functions to estimate what the "real income equivalent" would be of this rent reduction. The real income equivalent would be the dollar value of a cash grant that would make the household as well off as a given rent reduction.

The results of the study suggest that, even under the assumption of a 1 per cent reduction in rent, the total benefits of rent reduction are significant. Total savings to renters would be $21.22 million for 1978, and the real income equivalent would range from $19.99 to $20.38 million. In examining the distribution of costs and benefits by household and household income class, the findings show that the largest net benefits are received by the lowest income group, while the greatest costs are borne by the highest income group. Overall, the redistributive effects of rent review are found to be progressive (see Table 2).

The analysis by age of the head of the household demonstrates that the overall distribution is from households with older heads to households with younger

TABLE 2: Costs and Net Benefits of Rent Review by Income Group Assuming 1 Per Cent Impact for Ontario, 1978

Household Income	NIFI	RLAH	RLYAH	D	DD	DIFF
	($)	($)			($000)	($)
Under $4,000 -	197	1.66	0.0007	+0.0025	+1.43	6.09
$ 4,000- 7,999	638	5.37	0.0009	+0.0005	+0.97	3.30
$ 8,000- 11,999	796	6.70	0.0007	+0.0003	+1.02	3.64
$12,000- 14,999	686	5.77	0.0004	+0.0003	+1.26	4.64
$15,000- 24,999	612	5.15	0.0002	+0.0002	+2.77	3.05
$25,000 or more	1,712	14.40	0.0004	-0.0003	-7.45	-9.65

NOTES:

NIFI: average investment income of household

RLAH: average rental income loss per household

RLYAH: average rental income loss as a proportion of household income

D: net benefit per dollar income

DD: total dollar net benefit

DIFF: average net benefit per household

SOURCE: John Miron, 1981, The Redistributive Impacts of Rent Review: Empirical Findings, Toronto, Ministry of Municipal Affairs an and Housing, p. 20.

heads. The analysis by type of household shows the greatest benefits going to those who are young, live alone, are single parents, and have no children.[28] Consistent with the above-noted costs, households consisting of older-families suffered the greatest loss of income.

A final matter that is examined by Miron is the cost (reduction in rental income) as it is distributed among

unsubsidized renter households, subsidized renter households, and owner-occupied households. (Renters bear the costs through equity ownership in stocks and other investments by mutual and pension funds.) Miron's results show that of these three groups, it is the owner-occupied households that suffer the greatest loss. Approximately 75 per cent of the total loss is borne by this group, while the renter households incur the remaining 25 per cent. That is because owner-occupied households tend to have higher incomes and also have more investment income than renter households.

The final Ontario study to be considered is by Blatt (1982), who assumes that rents in Ontario would have been 7.5 per cent higher without rent regulation.[29] Her study is similar to the previous studies in that she uses 1978 HIFE data and examines the costs and benefits of rent review for various income classes and age groups. Her study builds upon Miron's.

The results of Blatt's study suggest that the benefits of rent review are progressive and that rent savings as a percentage of income average 2.7 per cent for the three lowest income groups and 0.9 per cent for the two highest groups. With the assumption that rent review has lowered rents by 7.5 per cent, the total not paid to landlords was slightly more than $159 million. When the costs of loss of rental income are included, the net effect is also progressive: the lowest income group obtained a benefit of 1.9 per cent of income, and the highest income group had a

net loss of 0.2 per cent of its income (see Table 3). Blatt argues that, although the structure is progressive, rent regulation does not have a substantial distributive effect on relative income, since the size of the redistribution is not great.

In examining benefits by age distribution, the study also shows that the greatest benefits accrue to the youngest and oldest age groups. With respect to costs, it is the oldest age group that has the largest investment income and therefore bears more of the costs. The net effect of rent regulation is that the youngest age group receives the greatest net benefit and the oldest age group bears the greatest cost.

To summarize, all three Ontario studies find that rent review is a progressive policy, although the results differ somewhat. The methodology and data used in these studies and the implications for the results are evaluated below.

Decrease in Capital Values

Rent review has the effect of reducing the expected income stream from rent-controlled buildings. Since the market value of an income-producing property is determined by the discounted present value of its income stream, the effect of rent control is to reduce the capital value of controlled buildings. Unlike the flow of benefits and costs that accrue from reduced rents over the time a household occupies

TABLE 3: Average Net Benefit or Loss as a Percentage of Income, Assuming a 7.5% Impact, Ontario, 1978

Income Group	Average Income ($)	Total Net Benefit or Loss ($000)	Number of Households ($000)	Average Net Benefit or Loss ($)	Average Net Benefit or Loss as a Percentage of Income
Under $4,000	2,440	10,759.0	235	45.78	1.9
$ 4,000- 7,999	6,050	7,230.9	293	24.68	0.4
8,000-11,999	10,010	7,694.8	280	27.48	0.3
12,000-14,999	13,560	9,433.7	271	34.81	0.3
15,000-24,999	19,650	20,736.7	910	22.79	0.1
25,000 or more	35,240	(55,842.6)	772	(72.33)	0.2

SOURCE: Rena Blatt, 1982, Who Benefits From and Who Pays for Rent Review, Toronto, Ministry of Municipal Affairs and Housing.

a unit (or a landlord owns it), the capital loss is a one-time reduction that falls upon the landlord who owns the building at the time controls are imposed. It is also possible that the capitalization rate increases owing to the risk or uncertainty that controls will become more restrictive in the future.

Capital losses will be incurred by the owners of buildings that are placed under rent regulation, but these losses will not be realized until the owners actually sell their buildings. Ideally, to examine the capital losses incurred, it would be necessary to monitor the market sales, after rent regulation was imposed, of all regulated buildings. That would enable one to assess both the size and the timing of the capital loss.

Two Ontario studies attempt to measure the impact of rent review on capital values: Smith and Tomlinson (1981) and Blatt (1982). Blatt analyses the extent to which the capital value of rental units has been reduced by examining the sale prices of apartment units in Metropolitan Toronto from 1970 to 1980. Teela Market Survey data are used for the average and median prices for apartment buildings with twenty units or more for each of the cities and boroughs of Metropolitan Toronto. The data do not reveal any clear trends. However, when the actual selling prices in each jurisdiction of Metropolitan Toronto from 1975 to 1979 were compared to what they would have been if they had increased at the rate of inflation (see Table 4), the results show that there may have been a relative capital loss.[30] The

TABLE 4: Average Unit Price Compared to Inflationary Price

Year	A/I[a]	CPI[b]	Toronto	North York	Etobicoke	East York	Scarborough	York
1975	BASE	10.8	$15,550	$16,078	$13,613	$10,803	$15,829	$15,331
1976	A		15,675	14,448	9,000	14,109	16,727	11,042
	I	7.5	17,229	17,814	15,083	11,970	17,539	16,987
1977	A		15,492	14,559	18,670	14,297	17,132	16,896
	I	8.0	18,522	19,150	16,214	12,867	18,854	18,261
1978	A		15,456	18,646	17,044	15,953	18,350	12,114
	I	9.0	20,003	20,682	17,431	13,897	20,362	19,772
1979	A	n.a.	17,994	18,912	18,366	17,838	17,511	15,592
	I		21,544	22,544	18,999	15,148	22,195	21,497

a A = the actual average selling price for that year.

I = what the selling price would have been if the base year price had kept pace with inflation.

b Average annual change in consumer price index

SOURCE: Province of Ontario, Ministry of Municipal Affairs and Housing, 1982, The Impact of Rent Review on Rental Housing in Ontario, p. 97.

results demonstrate that, for all jurisdictions except East York, sale prices of rental units did not keep pace with the rate of inflation. (The East York exception is explained by the fact that the 1975 base figure for East York appears low.) These findings are not conclusive since all real estate, not just rental units, may not have kept up to inflation and there may be other factors (besides rent regulation) that explain the results.

Smith and Tomlinson (1981) also use Teela data for the 1974 to 1980 period. They use the average price per unit of rental buildings with six units or more for the City of Toronto and sale prices for condominium apartments and residential dwellings for Metropolitan Toronto. In their analysis (see Table 5), they first compare the rental apartment per unit price to constant dollars. They then go on to present the ratio of the per unit price of rental apartments to Multiple Listing Service prices for residential dwellings and condominium apartments. Their analysis demonstrates that the market value of rental apartments has decreased in relation to condominiums and residential dwellings over the 1975 to 1980 period.[31] The authors thus conclude that rent controls have lowered the capital asset value of rental apartment buildings.

Both studies attempt only to demonstrate the existence of a decrease in capital values arising from rent review. They do not attempt to measure the loss.

In Blatt's (1982) study, neither the actual value of the decrease nor the impact on a typical building (or unit) is

TABLE 5: Prices of Rental Apartments in Toronto, 1974-80

Year	Average per Unit Price for Rental Apartment Buildings of Six or More Suites, City of Toronto[a]		Multiple Listing Service Average Sales Prices, Metro Toronto[b]		Ratio of the Per Unit Price of Rental Apartments to MLS Prices	
	Current Dollars	Constant 1975 Dollars[c]	Residential Dwellings	Condominium Apartments	Residential Dwellings	Condominium Apartments
1974	15,407	17,062	52,806	35,031	0.292	0.440
1975	18,903	18,903	57,581	35,959	0.328	0.526
1976	17,617	16,388	61,389	37,027	0.287	0.476
1977	16,766	14,441	64,559	37,596	0.260	0.446
1978	17,730	14,027	67,333	38,959	0.260	0.455
1979	16,901	12,238	70,830	43,316	0.239	0.390
1980	17,429	11,459	75,694	46,754	0.230	0.373

a Apartment prices calculated from Teela Market Surveys, Ltd., Apartment Surveys, Toronto.

b Multiple Listing Service prices provided by the Toronto Real Estate Board.

c Constant dollars based on the consumer price index.

SOURCE: L. B. Smith and P. Tomlinson, 1981, "Rent Controls in Ontario; Roofs or Ceilings," Journal of the American Real Estate and Urban Economics Association.

estimated. In order to demonstrate that the effect is occurring, she uses data only for the jurisdictions in Metropolitan Toronto and only for buildings with twenty or more units. One must ask whether Metro Toronto is representative of all Ontario and whether buildings with twenty units or more are affected in the same way as buildings with less units. More significantly, it is not clear why inflation is the appropriate measure for comparison, unless some historical relationship can be established between the price of rental accommodation and inflation. Moreover, as stressed above, there may be other factors in addition to rent regulation that affect the relationship between the two variables. Inflation is affected by a number of macroeconomic variables, while the price of rental accommodation is influenced by such variables as the demand for rental accommodation, interest rates, and operating costs.

Smith and Tomlinson also do not attempt to estimate the total cost (capital loss) for all controlled structures. However, their method of demonstrating the existence of the effect is somewhat better than Blatt's. By relating prices of apartments to condominiums and residential units, their analysis at least makes comparisons to other types of residential real estate. This analysis is also limited, however, to the City of Toronto and Metropolitan Toronto.

It can be argued that, in addition to estimating the capital loss, the benefit stream should also be capitalized. A prime element in the capitalization of benefits is the

shift in property rights to the tenants in regulated units. This was discussed in the theoretical section above. However, there are no studies that attempt to estimate the capitalization of benefits.

To summarize, the two Ontario studies provide only a preliminary analysis of capital loss. Both studies suggest that residential rent-controlled buildings have suffered a capital loss in relation to uncontrolled buildings, but the data used and the degree of analysis undertaken make these results somewhat less than conclusive. In order to obtain a better understanding of what income class bears the burden of decreases in capital values, it would be necessary to have several pieces of information about the owners of rental buildings that were affected by rent review when the legislation was imposed. First, it would be desirable to know the number of units and buildings that were owned by firms and individuals as well as a further breakdown of firms according to whether they were private or public real estate companies. Second, data should be obtained for the market sales of each property after the imposition of rent review. Third, in order to assess the redistributive effects, it would be necessary to have a distributive series by income class for owners of rent-controlled units in Ontario.

Methodological Issues

This part of the study examines a number of methodological issues that relate specifically to the studies described above and analyses the incidence as well as the impact of rent review.

Horizontal Equity[32]

Horizontal equity refers to the effect on people in similar circumstances, while vertical equity refers to the treatment of people in different circumstances.

It is generally assumed that the redistributive effect of rent review is from landlord to tenant and therefore has a tendency to be mildly progressive (vertically equitable). This appears to be borne out by the Ontario data, which suggest, when both costs and benefits are examined by income group, that it is only the highest income group that is a net loser.

In order to determine whether the policy achieves horizontal equity (equal treatment of people in the same circumstances), it is necessary to examine both the cost and benefit components. It can be shown that the subsidy component may be horizontally inequitable. Consider two households with the same income and family characteristics where one household is an owner-occupier and the other rents a controlled unit. In this case the renting household

obtains a subsidy from the policy, while the owner-occupier does not benefit.

A second case can be seen where both households rent their accommodation: one household rents in the controlled sector, while the other rents in the uncontrolled sector. The household in the uncontrolled sector will not receive the benefit. It might be expected that this household would seek a controlled unit. Owing to low vacancy rates, however, a comparable controlled unit may simply not be available or the expected gains from the subsidy may be offset by the additional costs of finding a controlled unit.

Where both households occupy controlled rental accommodation, the horizontal inequity may be the least obvious. In this case, although the households have the same income, they may receive different benefits because they consume different amounts of housing. The benefit or subsidy they receive will increase with the amount of housing they consume. Even when the two households consume the same amount of housing, over time they may receive different levels of benefits because of the rent review structure. For example, one building may, with acceptable refinancing costs or exceptional increases in repairs or operating costs, obtain increases above the allowable annual increase. In the absence of rent review, the rents charged for the two units might have increased at the same market level.

Tenants, depending on how long they have lived in the community, may also be treated differently by rent

regulation. As noted in the first part of this study, non-price rationing may favour long-time residents. Thus, existing residents benefit and new residents do not.

It can also be established that the system may not be horizontally equitable on the cost side. Only the owners of capital in the rental housing sector bear the burden of rent review. The cost of rent regulation is not levied upon all owners of capital. It is not levied upon all owners of real estate. It is not levied upon all owners of housing, but rather upon all owners of existing rental housing regardless of income or wealth.

To summarize the horizontal equity issue, empirical studies of the distributive impact of rent regulation are unable to take into account how people in similar circumstances are treated and it cannot be assumed that they are treated the same. In particular, the benefits depend on whether a family has a unit in the regulated or unregulated sector, how much housing they consume, the provisions of the rent regulation scheme, and whether residents are new to the community. The costs depend on what form of capital is held.

Temporal Aspects

There are two temporal aspects of the Ontario studies that should be considered. The first relates to the years actually chosen for the analysis, and the second arises from

the implications of measuring costs and benefits at only one point in time.

Fallis (1980) uses 1972 data, while the other two studies use 1978 data. The Fallis study uses data before the imposition of rent review. This may be inappropriate if households are expected to change their behaviour in responses to this government policy.[33] Potential responses might include new household formation, undoubling (where two households now living together move into separate dwellings), or changes in decisions to purchase housing. This aspect of the Fallis study may cause some questioning of the results. However, his study was intended to demonstrate a method of studying the redistributive impact of rent review rather than to provide definitive results.

Although the two later studies, (Miron, 1981 and Blatt, 1982), use data from a year that is after the imposition of rent review, the data apply only for two years after the legislation was passed. It is possible that the same analysis using more recent data would reveal somewhat different results. First, two years may not be a long enough time for households, investors, and builders to adjust their behaviour to the policy. The incentives for adjusting may only become evident after the policy has been in effect long enough for market differentials to become obvious. Second, since rent review was originally passed as a temporary measure, the lag in adjustment may have been even greater. Households and investors may not respond to temporary policies if the cost of adjustment cannot be

recouped over the expected duration of the policy. They may only begin to act when it becomes clear that rent review is going to be in existence for the foreseeable future.[34]

The second issue is that the costs and benefits of a decrease in rent (except for a decrease in the capital value of units), do not occur only at one time. In two of the three Ontario studies, the analysis makes the estimate only at one point in time, that is, when the data were collected. Only Blatt (1982) considers the flow perspective in her study. More precisely, the costs and benefits accrue over a priod of time and thus should be expressed as flows with the value being determined by the accumulated costs and benefits. Benefits will accrue as long as households remain in controlled units. There is an incentive, therefore, for households either to remain in, or to move into, controlled units. On the other hand, investors in rental accommodation will bear the costs as long as they own units that are under rent review. Their cash flows will be affected every year and, accordingly, the capital values that will be realized when their buildings are sold will be reduced. If a better rate of return can be expected in other investments, there will be an incentive to divest themselves of controlled rental units and make other investments. However, these decisions are made more complex because of the loss in capital assets incurred under rent review. As a result, landlords who expect that controls will be removed may decide not to sell their buildings until that happens; others may increase the rents to maximize asset values or

wait until the rents rise above the control level (currently $750 a month).

Blatt recognizes the concept of flows in her study and makes an estimate of the amount not paid to landlords or transferred to tenants since the beginning of the program (1975) to mid 1981. The estimate of $955.27 million (undiscounted nominal dollars) was obtained by applying a 7.5 per cent reduction in rents and the distribution of costs and benefits for 1978 to all years (1975 to 1981). There is no reason to believe that the rental reduction or any of the variables lying behind the distribution of costs and benefits would remain stable over that period. In fact, owing to behavioural responses and to changes in demography, market conditions, and income, there is good reason to believe that the variables would not remain stable over a six-year period.

Income Measurement

The notion that the costs and benefits flow over some period of time raises the issue that annual household income may not be the best measure of income. The distribution of benefits may vary annually since income may vary from year to year during the lifetime of the household. A household's investment profile and strategy may also vary over its life-cycle.

All three of the Ontario studies use HIFE data on household income that include: earnings, net income from

boarders and roomers, net income from investment, government transfer payments, and miscellaneous income. Although these data are readily available and are applied in all three analyses, it is necessary to consider whether they are a useful measure of income for understanding the incidence of rent review. Since incidence studies are intended to determine the final incidence of rent review, household income for a specific year, particularly one that is close to the year of the policy being imposed, may not be a suitable measure.

There are several difficulties with the measurement of income for incidence studies in general (see Bird and Slack, 1978). First, the pattern of incidence is dependent upon the concept of income that is used. An example of the possible measures is provided by Maslove (1972), who considers family money income, full income (family money income plus some imputed components), and broad income (full income minus government transfer payments). Of the three measures, he prefers broad income because it is an estimate of pre-tax income without government expenditures. This measure of household income differs from that used in the HIFE survey in that it excludes government transfer payments. Another consideration is that the measure of income should be broad enough in its definition to include accrued capital gains.[35] With the use of this broader measure of income, it is expected that the distribution of costs and benefits would be altered.

It can be argued further that to understand the distribution of costs and benefits over time, a measure of permanent or life-cycle income is required. Throughout a household's life-cycle, there will be periods when their income changes, perhaps dramatically. Normally, the age of the head of a household is examined in relation to its income. There is a life-cycle pattern that exists; income rises until the head reaches a particular age and then declines.[36] Since the income variations may alter the costs incurred and benefits derived by a household in a given year, to examine the true costs and benefits some consideration should be given to permanent or life-cycle income rather than to the simple measure of annual income.

The bias that results from using annual income as opposed to some measure of permanent income is not clear. The degree of bias would seem to depend on the demographic structure of the population. For example, if a high percentage of household heads is in the 20 to 30 age group, annual income may understate the progressivity compared to a permanent income measure. Other situations can be constructed in which annual income overstates the progressiveness.

Closed Economy

Miron (1981) assumes in his analysis that Ontario is a "closed economy" with respect to the flow of rental income. This essentially means that any reduction in rents in

Ontario is assumed to lead to a corresponding loss in rental income for Ontario residents only. It does not account for the ownership of Ontario's controlled rental stock by landlords or investors living outside Ontario. The reason for this assumption is the lack of information regarding landlords residing in and outside of Ontario.

The effect of this assumption is to overstate the costs or loss of investment income for Ontario landlords. That is because it is known that there are certainly some landlords that reside outside of Ontario. This assumption will lead, therefore, to an underestimate of the net benefits for each income class in Ontario only.

The "closed economy" assumption is also limiting because it does not allow for adjustments in investments by landlords outside the province, adjustments essential in the examination of the incidence of the policy.

Rent Standard

Each of the Ontario studies assumes a measure of the difference between the current rental structure and what rents would have been in the absence of rent review. Fallis assumes a decrease of 2 per cent and Blatt 7.5 per cent, while Miron bases his analysis on a 1 per cent reduction. While it might be expected that the estimated reduction would be different for various points in time, it might also be expected that the estimates would be reasonably close

when various analysts examine the differential for the same year in a given jurisdiction.

Fallis (1980) assumes a 2 per cent reduction in rents for no apparent reason. Nor is his analysis for a specific year. Rather, the 1972 data are used merely to provide a "crude approximation".

Miron (1981) uses the 1 per cent reduction figure to assess a 1 per cent impact. The estimated rent reduction can then be multiplied by this impact figure in order to determine the effect for any level of reduction, assuming the impacts are proportional at each percentage change in rents. For example, if it were determined that rents were reduced by 5 per cent, then the estimated impact would simply be multiplied by five. The assumption of proportionality may be questioned, however, since one might expect the behavioural response to a 1 per cent deduction in rents to be different than the response to a 5 per cent reduction.

Blatt (1982) assumes the decrease in rents to be 7.5 per cent for 1978 after undertaking some calculations. She assumes that when there are low vacancy rates, rents will tend to increase more rapidly than with higher vacancy rates. In particular, it is assumed that rents would be 2.5 per cent higher for each percentage point below a 4 to 5 per cent vacancy rate. With Ontario vacancy rates about 1.6 per cent in October 1978, she concludes that rents would have been 7.5 per cent higher for controlled units in 1978 without rent review. There is no reasons given for the

crucial assumption of the 2.5 per cent higher rent for each percentage reduction in the vacancy rate below the range of 4 to 5 per cent. However, some support for her calculation is given by Smith and Tomlinson (1981). On the basis of earlier calculations by Smith, they assume that 5 per cent is the pre-rent review equilibrium vacancy rate where no excess supply or demand exists. Assuming a stock elasticity of demand for rental units of 0.4 to 0.5 and given the 1980 Ontario vacancy rate of 1.5 per cent, they then calculate that 1980 rents would be 7 to 8.75 per cent higher than the controlled rents.

Fallis and Miron do not make any attempt to estimate the amount of rental decrease, perhaps because not a great deal of research as been done regarding how to make these estimates. Blatt makes an attempt to estimate the magnitude but her results are based on the one crucial assumption correlating rents and vacancy rates. Generally, it can be concluded that the direction of the effect is known but not a great deal of research has emerged on how to estimate its magnitude.

Recent research by Marks (1984) for Vancouver appears to be a useful approach for Ontario. In his approach, he estimates hedonic indices (which assume that prices or rents reflect the characteristics of the units) for both the controlled and uncontrolled sectors of the rental market. The characteristics used to estimate the indices include those of the individual apartments and the buildings. To

estimate the effect of rent control, he evaluates the characteristics for the average controlled unit at the implicit prices from the uncontrolled hedonic index. The effect of the control is determined by the difference between the resulting evaluation and the average controlled rent.

Data Issues

As is the case with any analysis that uses available data, the form of the data may not be ideal. For that reason, researchers are careful to point out the limitations of the data they use. The authors of these Ontario studies are not an exception to this practice. In particular, Miron (1981) and Blatt (1982) discuss shortcomings of the HIFE microdata file[37] and those from Statistics Canada.

In addition to the authors' reservations about the collection of data, there are other problems that should be noted. These problems may not have been important for analyses based on 1978 data, but they may prove to limit future studies using more recent data (HIFE data is collected every two years). This is important since these studies were based on data collected approximately two years after the imposition of rent review. More than seven years have passed since the inception of rent review and more than five years since the data for these analyses were collected.

Data Collection Techniques

Several aspects of the data did not present a problem in 1978, but may introduce biases in more current analyses. For example, HIFE data do not separate households according to whether or not their dwelling unit is under rent review. As noted previously, the data should separate renters in controlled and uncontrolled units so that one can examine the effects of rent review upon both groups. HIFE data do isolate subsidized households that, under the rent review legislation, are not rent controlled. However, it does not isolate households that occupy units that are not controlled because their rent is more than $750 a month or the occupants of units that have been built since 1976. Although the 1978 HIFE data include some households that were exempt from rent review, it was assumed that the number of households that occupied units constructed since 1976 was small. It was also assumed that the number of households that occupied units renting for more than $750 a month were few and that they were probably high-income households that may have already been filtered out of the HIFE data.

Those assumptions are no longer valid in 1984, since there has been some rental construction completed in Ontario since 1976.[38] Furthermore, with some rent increases above the guideline rate because of the cost pass-through provisions (partly owing to a period of high mortgage interest rates and sales of rental buildings), it is expected that more units are above the $750 a month level

today than in 1978. Rising incomes may also suggest that today households occupying these units may no longer be classified as the very rich, especially since a rent of $750 a month represents 30 per cent of a $30,000 annual income.[39]

A final comment on the HIFE data is that the income and rental information are not collected for the same year. The approach used in collecting the data is to ask for last year's household income and the current year's rental payments. This practice suggests a bias towards overstating rents as a percentage of household income. For the three Ontario studies described above, this bias suggests that the effects may not be as progressive as reported.

In order to be able to estimate the impact of rent review, it would be very useful if some additional data could be collected in the HIFE survey. In particular, it would be useful if the HIFE data could separate tenants in controlled and uncontrolled units. More information on households with incomes above $25,000 would also be useful. In other words, a better breakdown of income classes above $25,000 is required. Finally, it would be helpful to have precise data on rental income and the characteristics of owners of rental properties (both firms and individuals).

Aggregation of Households with Incomes over $25,000

The HIFE data have only six income classes of which the highest income comprises all households with incomes $25,000

or over. This breakdown presents a problem for a more current analysis. In 1978, 113,000 households or approximately 14 per cent of the rent-controlled households included in the analysis, were lumped into the highest category.[40] With the rise of household incomes from 1978 to the present, a significant increase in the number of households in the highest income group can be expected. This suggests that any current analysis using the 1978 income groups would lose analytical capability. The problem arises in the benefit distribution analysis of households that occupy rent-controlled units, as well as in an analysis of cost distribution to all households in Ontario. Unless recent HIFE data break income down into more income classes above $25,000, it will be difficult to assess how the burdens are borne by a large number of households.

Combining all households with incomes greater than $25,000 places these households in one class with a much greater range of income than all other classes studied. The result would be an overstatement of progressivity of rent regulation because, in reality, moderate incomes would be combined with some very high incomes. So, when looking at costs, for example, moderate- and high-income families would seem to bear the greatest burden. Most of the benefits would also seem to be enjoyed by moderate and high-income families. The results of the studies, however, would suggest that these costs and benefits are borne by the "highest" income class.

Investment Income

All three of the studies distribute the cost of rental reductions across income groups by investment income. Since HIFE data do not separate out rental income by income class, these studies have assumed that the distribution of rental income is proportional to the distribution of investment income. The use of investment income, which includes net rental income, dividends, interest, and other returns from investment, is considered to be a reasonable approximation. Investment income may be appropriate because there is not only direct ownership of rental accommodation but there are also landlords who are public real estate companies. Therefore, a wider range of people share in the ownership through direct stock purchase or the participation of mutual or pension funds in this type of investment. This suggests that profits from real estate income may exist, through stock or mutual fund dividends, for households that do not directly own rental apartments.

The main question is whether net rental income from housing is distributed in the same proportion as investment income. If it is not similarly distributed, what biases does the use of investment income introduce? It might be expected that owing to the large number of landlords that own a small number of rental units in Ontario, residential rental income may be skewed more toward the lower end of the income spectrum than net investment income (or net rental income, which includes rental income from commercial and

industrial properties as well). Another bias that may result from using investment income in place of residential rental income is that investment income is probably more concentrated in upper income classes than is residential rental income. This would overstate the progressivity of the costs of rent review.

CONCLUSION

This study has attempted to determine by income class who bears the burden of rent regulation and who enjoys the benefits. The existing studies of the distributive effects of rent regulation were evaluated both as to the underlying theoretical models and the empirical methods employed. This concluding section of the study summarizes the findings and suggests the related implications. It also outlines the gaps in our knowledge of this issue and suggests what information is required before any final results can be presented.

Although the existing <u>empirical</u> studies only look at the initial effect of rent regulation on landlords and tenants in the controlled sector, this study has established that there are other important groups affected by this policy as well. In particular, four groups have been mentioned: landlords in the controlled sector, landlords in the uncontrolled sector, tenants in the controlled sector, and tenants in the uncontrolled sector. Owner-occupiers,

potential owner-occupiers, labour, and consumers are also affected. Since very little is known about the impact on the latter groups, and since what is known suggests that the impact is likely small, this study has not concentrated on them.

The theoretical literature shows who bears the burden of rent regulation and who enjoys its benefits. The recent empirical studies, building on the theoretical model, show how the results are distributed by income class. In other words, they show whether high-income or low-income people benefit relatively more from rent regulation policy. The theoretical and empirical findings are each summarized below.

Theoretical Models

The Traditional analyses suggest that landlords of rent-controlled units bear the burden of rent regulation through reduced rental incomes and tenants in rent-controlled units enjoy the benefits through reduced rental payments. These empirical studies generally do not analyse the impact on the uncontrolled sector.

As discussed in the first section of this study, this theoretical model has some weaknesses that may affect the results. First, the burden on landlords in the controlled sector is understated because it does not include a measure of the capital loss at the time the regulation is imposed. Second, the model also understates the burden to landlords

of controlled units because no account is taken of the administrative costs of rent review. Third, this model overstates the benefits to low-income tenants of controlled units because it excludes the effect of non-price rationing that may favour high-income tenants. Last, the model does not analyse the impact of rent regulation on the uncontrolled sector. Some studies have suggested that tenants in the uncontrolled sector are worse off as a result of rent regulation and that landlords in the uncontrolled sector are better off. These results hold in the short run, that is, until additional units are built.

This study has also suggested that it may be useful to consider a different model of the rental housing market -- one that allows for market imperfections. The results of this alternative model suggest that landlords in the controlled sector may not be as bad off as the traditional perfectly competitive model suggests and that tenants in the controlled sector are indeed better off. In the uncontrolled sector, however, there is no effect on tenants or landlords.

The above summary suggests that landlords in the controlled sector do bear the burden of rent regulation and that tenants in the controlled units enjoy the benefits. However, a closer look shows that the magnitude of the burdens and benefits may be different than the traditional theory suggests. In addition, depending on what model of the rental housing market one believes, there may also be an influence on the uncontrolled sector.

Empirical Studies

The empirical studies all suggest that rent regulation is a progressive policy. In other words, the net benefits (benefits minus costs) are enjoyed relatively more by low-income people than by high-income people. However, the empirical methods used may bias the results somewhat. A serious problem arises because investment income is used as a proxy for rental income. The result, as noted previously, is that the empirical studies overstate the progressivity of rent regulation. The lumping together of incomes over $25,000 also overstates the progressivity of the policy. The use of money income, instead of permanent income, exaggerates the progressivity. The results of the empirical studies appear to be in the right direction; nevertheless they do tend to overstate the progressivity of rent regulation.

An important shortcoming of the empirical studies that have been done in Ontario needs to be stressed again -- they are based on six-year-old data. The usefulness of even the most recent studies by Miron (1981) and Blatt (1982) is limited because of the time frame used. Moreover, the data for 1978 represent a period of only two years after the imposition of rent review in Ontario, not nearly sufficient time to observe behavioural adjustments to the policy. Not only has the policy itself changed (for example, the guideline increase was lowered), but people are more familiar with the rent review system, the market may have

changed, new units have been constructed, and other factors may also have changed. It thus needs to be stressed that the available empirical results may not be suitable for use in formulating a policy in 1984.

A second consideration has to do with empirical studies of incidence in general. These studies merely add numbers to the different theories about who bears the burden and who enjoys the benefits of rent regulation. These numbers do not provide a test of the theories but simply distribute rents and rental income (or some proxy) by income class according to what the theory suggests is the correct distribution. For that reasons, it is essential to understand the underlying theoretical model in each of these studies and to evaluate the results according to the appropriateness of the model.

Information Requirements

Unfortunately, there is insufficient information to determine accurately the distributive impact of rent regulation. In particular, more information is required on the nature of the rental housing market. Is it perfectly competitive? Are there imperfections affecting its market? If so, how do they influence the effect of rent regulation? This study has suggested that there may be imperfections resulting from government intervention in the market for new rental housing. Are there other kinds of market

imperfections that are relevant? The answers to these questions would determine whether one should use the results of the perfectly competitive model or relax the assumption of perfect competition when undertaking future studies.

A comprehensive impact study would also take into account the supply response to changes in demand. For example, if the demand for uncontrolled rental housing increases because of a low supply of rent-regulated units, rents will be driven up in that sector initially. If the supply increases, however, rents would eventually fall back to their pre-regulation level. This would affect the benefits to uncontrolled-sector landlords and the costs to uncontrolled-sector tenants.

Another area where more evidence is required is that of non-price rationing. No empirical evidence is available as to whether low-income people suffer or benefit because landlords of controlled units use means other than price to determine who will obtain controlled units.

In order to determine how costs and benefits are distributed among income classes, it is necessary to have more information on the income profiles of tenants and landlords in controlled and uncontrolled units. Since the theory suggests that the impact will be different for each of these categories, it is essential to have separate data on each of these groups. These data are currently unavailable.

Rent standards is another area where information is needed. What would rents have been in the absence of rent

regulation? Each of the three Ontario studies described in this study assumes quite different standards. Some promising work has been done on this topic by Marks (1984) using an hedonic price index technique.

Finally, in trying to determine the impact of rent regulation, a number of other factors have to be held constant. This technique allows the effects of rent regulation to be separated from other activities that may be going on in the marketplace. For example, it may be useful to analyse the effect of rent regulation on rental starts in Ontario. In order to do that, however, it would be necessary to isolate other factors that may have affected rental starts, such as high interest rates or government programs such as MURBs.

Two Remaining Policy Issues

There are two remaining policy issues. First, empirical studies of the redistributive impact of rent regulation show that there is a transfer of income from landlords to tenants of controlled units. However, the total amount redistributed is not known for certain because of a lack of information on how much rents are reduced by rent regulation. In a sense, rent regulation is a proxy for income redistribution. It is not clear, however, whether the best approach to redistribution is one in which a small group of people (landlords of controlled units) subsidizes a

somewhat larger group of people (tenants of controlled units) according to how much housing this latter group consumes.

Even if it is established that rent review is a progressive policy, one has to consider whether it is the best policy for redistributing income. This question is particularly important in light of the previous findings suggesting that the policy may not be horizontally equitable and also that it may be an inefficient means of redistributing income. As noted earlier, it would be necessary to know the magnitude of the efficiency loss in relation to any gains from redistribution to determine if rent regulation can be justified on redistributive grounds.

Given what little is known about how much rents are reduced by rent regulation and given that the policy is likely to be horizontally inequitable and result in an efficiency loss, it may be that redistribution of income should not be a primary objective of rent regulation. The exception is where there are imperfections in the marketplace that give unearned benefits to landlords at the expense of tenants and where rent regulation is used to remedy that situation.

Second, the redistributive effect of rent regulation has to be considered in relation to other housing programs and other income security programs that (implicitly or explicitly) redistribute income. It is not sufficient to analyse gainers and losers from rent regulation in a market in which there is other government intervention. Various

other subsidies and tax incentives to landlords, tenants, and owner-occupiers also have redistributional effects on some of the same people as rent regulation does. It is thus possible that rent regulation acts as a counterbalance to other programs that are considered to be regressive in incidence. Alternatively, the effects of rent regulation could be the same as other policies. The important policy consideration for the future is the study of the impact of all housing programs (and perhaps income security programs in general) on society and the way in which rent regulation plays a part in this system.

NOTES

1. "Rent regulation" is a general term that can encompass various forms of intervention in the determination of rents, such as direct control of rents, a rent review process, cost-pass-through provisions, and possibly other forms of intervention. The Ontario system is specifically referred to in this study as "rent review", whereby there is a guideline increase control coupled with cost-pass-through provisions in a review process. "Rent control" is a guideline increase system and is generally referred to in this study in reference to the work of other authors who have analysed this particular form of rent regulation.

2. A perfectly competitive market is one that is characterized by three basic assumptions: full information on the part of households and firms, everyone acts as price takers, and there are no transaction costs. The concept of perfect competition is discussed further under the heading "Efficiency Loss".

3. A unit of housing refers to the physical quantity of housing, whereas a unit of housing service refers to housing of a particular quality; that is, it refers to the services derived from the housing unit.

4. Some capitalization may occur before the imposition of controls if there is any expectation that they may be introduced. The capital loss will reflect expectations regarding the duration and severity of controls. It is also true that subsequent property owners will get a windfall gain if rent controls are removed, but the owners subsequent to them do not.

5. This result is not captured in the empirical studies since only the loss of rental income is distributed by income class. In order to include the capital loss to landlords, it is not sufficient to allocate the burden of rent regulation according to present ownership.

6. The Residential Tenancy Commission's Annual Report for the 1981-83 period shows that the expenditure for the Commission ranged from $4.7 million to $6.5 million dollars a year during this period.

7. Another exception is provided by the Fraser Institute (1981).

8. Arnott assumes a form for the maintenance function whereby a landlord constructs a building of a certain quality and spends an increasing amount on maintenance in the early years. Subsequently, maintenance expenditures decline until the time of demolition. It

is not clear why this form has been chosen or whether it is the most appropriate.

9. Arnott also analyses the effects of a system that combines guideline increase controls and cost-pass-through provisions. This is very much like the current rent review system in Ontario. Since he argues that the distributional consequences are the same as under a pure guideline increase, only this latter scheme is presented here.

10. This analysis assumes costless mobility. If a tenant who likes good housing finds himself in a rapidly deteriorating unit, he will become worse off even if he pays the market-clearing rent, which is falling as a result of the quality decline.

11. It would be interesting to know whether the supply of illegal basement suites and rentals of single-family homes increase when there is rent regulation. The possible spillovers into these two markets might give some evidence of excess demand.

12. The nature of this redistribution within the tenant group will depend on the characteristics of newly formed households and migrants as compared to existing tenants.

13. Of course, it should be noted that these results are only for Toronto and only for a change in maintenance over a one-year period. One can possibly argue that it takes time for deterioration in quality to occur and also that Toronto is not representative of the rest of the province.

14. The quality effects may depend, in part, on the type of landlord. For example, if the landlord knows the details of rent review, he will realize that he can earn a good return, at the margin, on maintenance expenditures. Second, where the landlord and tenant are ignorant of the rules, there will be no change in the level of maintenance. Third, where there is excess demand and the landlord chooses to ignore the opportunities for increases above the guideline, two cases can arise: with low tenant turnover, the landlord will have an incentive to reduce maintenance. With high turnover, he will be unlikely to reduce maintenance expenditures.

15. The Ontario rent review system appears to provide a very high rate of return for incremental maintenance investments. For capital expenditures, an allowance for interest is built into the rent permanently. Furthermore, to the extent that rents are held down, the landlord can be assured that the market will bear a rent increase. The only disincentive to increasing maintenance expenditures is the administrative cost and

inconvenience of having to obtain approval for rent increases at the Residential Tenancy Commission.

16. In an earlier version of this paper, an attempt was made to analyse a general equilibrium model of the incidence of rent regulation in which rent regulation was regarded as a tax on the rate of return to rental housing. However, in applying this model to the Ontario scene, it became clear that many of the assumptions of the model were not appropriate. In particular, in a small, open economy such as Ontario's, it is unlikely that rates of return to capital would be affected by rent regulation. It might be worthwhile to consider another type of general equilibrium model, but it is felt that the partial equilibrium results presented here in conjunction with results for other markets, like the market for owner-occupied housing, go a fair way in explaining the impact of rent regulation.

17. There are also provisions in the income tax legislation that favour home-ownership, such as non-taxation of capital gains from the sale of a principal residence and the non-taxation of imputed income from owner-occupied housing. This latter measure means that two people with equal incomes and wealth but with different housing statuses are treated differently by the tax system. In particular, the renter who invests in something other than a home pays higher taxes.

18. If the increase in rents is anticipated, then they would already have been capitalized.

19. It is expected that additional costs to builders will be passed on to tenants.

20. This assumes, of course, that there is no expectation that rent regulation will be extended to new buildings in the future. If there is the expectation that rent regulation will be extended, then it would be necessary for the allowable rents to be sufficient for the landlord to earn a normal rate of return. If they are not, the results would be the same as for the uniform reduction in rents described in the text--landlords would suffer a loss in rental income and tenants would enjoy reduced rents. However, the decision to build the building initially would be affected if there was an expectation that regulation would be extended. This expectation might cause reduced rental construction.

21. For example, CRSP is a federal program that provides interest-free loans to developers of apartments meeting certain specifications.

22. Other effects that may occur are a redistribution of property tax burdens and increased mobility and search

costs for seeking new accommodation. Although these effects obviously have costs and benefits that could be distributed among various households within a rent-controlled jurisdiction, there is not a great deal of literature that attempts to measure the effects and virtually none in the Ontario context. Other costs, such as those of compliance and administration are also considered sometimes. Simply stated, compliance costs are passed on by landlords as far as possible, while administrative costs are borne by all provincial income tax payers in their tax payments.

23. It should be noted that a study by the Ministry of Municipal Affairs and Housing (1982) presents the data from the studies by Miron (1981) and Blatt (1982). These two studies were essentially background studies to the government report.

24. The Ministry of Municipal Affairs and Housing report again presents Blatt's analysis and the data published by L.B. Smith and Peter Tomlinson (1981).

25. It should be emphasized that he assumes a reduction of 2 per cent for demonstration purposes only and that number is not based on any estimate of impacts. Also, it assumes that all rental units had an equivalent reduction in rents. In reality, one would expect that the rent reduction and the rent savings are randomly distributed across the market. Therefore, the results would only be true on average.

26. Miron's 1 per cent reduction in rents is different than Fallis's 2 per cent reduction. Fallis gives no rationale for his 2 per cent but rather uses it as an "approximation". The 1 per cent used by Miron is meant to be a starting point or benchmark from which other percentage reductions can be estimated. The choice of rent standard is discussed further below.

27. For a discussion of who are considered to be subsidized households and the instructions HIFE interviewers are given to guide the respondents, see J.R. Miron and J.B. Cullingworth (1983).

28. The result that young heads of households, single-person households, one-parent households, and childless households are receiving the greatest benefits is consistent with the point made earlier regarding non-price rationing. Landlords might favour renting to tenants with these characteristics.

29. The details of her 7.5 per cent reduction in rents and how this figure compares with the other studies are described under the heading "Rent Standard".

30. Here the capital loss is assumed to be relative to what the capital gains would have been in the absence of rent review. It is a relative rather than an absolute measure in that pre-control capital gains may offset the post-control capital loss.

31. It should be noted that their analysis did not take into account quality differences such as size, location, and amenities for these types of residential units.

32. Horizontal equity is also discussed in Fallis (1984).

33. As described in the theoretical section, it is precisely for the reasons of behavioural response to policies that the incidence may be more important than the impact.

34. The original legislation, the Residential Premises Rent Review Act, was passed in December 1975 as a temporary measure with an expiration date of July 31, 1977. Before this date it was extended to December 31, 1978, and in June of 1979 it was extended indefinitely with the passing of the Residential Tenancies Act. When it was originally passed, some members of government suggested that it was brought into effect in support of the federal government's wage and price guidelines. Although there is serious doubt about how, much of a role this rationale played in the legislation's being passed, there may have been public perception that this and the guidelines were both temporary measures.

35. It has been suggested that accrued capital gains be included in the measure of income for incidence studies by both Maslove and Gillespie. See W.I. Gillespie (1964) at page 7; and Maslove (1972) at page 78.

36. For example, the 1978 HIFE data show that when average annual income is calculated for heads of household by age cohorts, income peaks in the 45 to 49 age cohort. See Blatt (1982) at page 30.

37. Both authors mention concerns with the HIFE microdata file throughout their studies, but they both also discuss it in special sections of their studies. See Blatt (1982), Miron (1981), and Miron and Cullingworth (1983).

38. From 1976 to 1982, there was 128,041 rental starts in Ontario. This includes condominiums (some of which are rented) and subsidized rental units (which are not covered by rent review). See CMHC (1983a).

39. Since the average income in Ontario in 1981 was $28,002 (see 1981 Census), there can be expected to be a significant number of renters paying $750 per month or more.

40. These statistics are based on the 1978 HIFE data. It can also be noted that 270,000 households, or 33.7 per cent, are in the next-highest income group ($15,000-$24,999).

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